DOCUMENT RESUME

ED 207 328 FL 012 503

AUTHOR Vihman, Marilyn May
TITLE The Acquisition of Morphology by a Bilingual Child: A Whole-Word Approach.
PUB DATE 12 Oct 80
NOTE 19p.; Paper presented at the Annual Boston University Conference on Language Development (5th, Boston, MA, October, 1980).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Bilingualism; Case Studies; *Child Language; Cognitive Style; English; Estonian; Finno Ugric Languages; *Language Acquisition; Language Research; *Morphology (Languages); Psycholinguistics; Young Children

ABSTRACT

A delay in the acquisition of morphology by a two-year-old Estonian-speaking boy was investigated to determine the role the child's bilingualism (with English) played in the delay. In contrast to his older sister, whose exposure to English was delayed, the boy exhibited a "whole word" approach to morphology, characterized by the following: (1) learning of postpositions before suffixal inflections in Estonian, (2) use of English "has" to mark possession in Estonian, (3) consistent learning of pronominal case and other suppletive or irregular morphological forms well before use of the corresponding regular marker, and (4) long-term use of "did" plus verb as an English past tense marker. It may be argued that, for a child who must deal with two languages from the first in his daily experience, inflectional morphology is in a sense less functional than word-size morphemes, which can more easily be fitted into the structure of either language. Since some bilingual children show no apparent morphological delay, the structure of the languages in question may play a role. Alternatively, it is possible that the whole word approach is simply a part of a more general cognitive style, a view that is supported by the boy's tendency to take a whole word approach to phonology as well. Further research on a number of bilingual children is needed to validate or invalidate the possible interpretations of the data. (JB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED207328

Marilyn May Vihman
Department of Linguistics
Stanford University
Stanford, CA 94305

The Acquisition of Morphology by a Bilingual Child:

A Whole-Word Approach

Presented at the Fifth Annual Conference on Language Development
Boston University
October 12, 1980

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Marilyn May Vihman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

FL 012 503

The existence of contrasting strategies in the acquisition of morphology has already been reported. In a series of studies of the grammatical development of three English-speaking children followed roughly from early in their use of multiword utterances to the point where they were using well over four morphemes per utterance, Brown and his associates found a striking difference in strategy across the children. Whereas one child, Eve, was far ahead of the other two in terms of MLU at a given age, another child, Sarah -- the slowest to develop longer utterances -- was consistently ahead in terms of grammatical development for a given MLU. That is, she acquired plurals and other functors, the auxiliary verb system, and tag questions earlier -- relative to MLU, not chronological age (Bellugi 1967, Cazden 1968, Brown and Hanlon 1970, Brown 1973). In a discussion of this individual difference in rate of acquisition, Cazden (1972) pointed out that "if, at a particular MLU value, Sarah supplies more required functors, then Eve's speech contains proportionately more content words... These two patterns can be labeled 'macro' development and 'micro' development, respectively. Macrodevelopment refers to the elaborateness of the semantic intention or plan for speaking; microdevelopment refers to the successful execution of whatever plan has been formulated... Evidently, synchronization of the two aspects can vary in ways that are masked by the global measure of mean length of utterance" (40f.).

As as illustration of a kind of macrodevelopment -- taken, in this case, from the Estonian speech of my son Raivo [R], at age 2;4 (MLU about 2.3), addressing his older sister, Virve -- consider the following sequence of sentences*:

---

*Line 1 represents the full grammatical equivalent of R's sentence in Estonian, followed by the gloss, line 2, the English morpheme by morpheme translation, and line 3, the actual form of R's sentence. Missing obligatory morphemes are indicated by a dash [-], and underlining is used where R correctly supplied the inflectional morpheme.

(1) Ema viis sinu värvid ära. 'Mother took your crayons away.'
mother take+past your color+s away
ema vii- sinu värvid ära

(2) See on miks sina 'värvisid igal pool. 'That's why [i.e., because] you colored all over.'
that is why you color+past+2nd person everywhere (lit. on every side)
see on miks sina 'värvi-+- iga- pool.

(3) Sina võid mängida minu 'värvidega. 'You can play with my crayons.'
you can+2nd person play+infinitive my color+plural+with
sina võid 'mängi- minu 'värvid-.

(4) Aga see on miks mina lähen nüüd minu 'tööle. 'But that's why [i.e., because] I am going to work now.'
but that is why I go+1st person now my work+to.
aga see on miks mina lähe- nüüd minu 'tööle.

We can see from these sentences that R, unlike Eve, is inclined to omit not just any grammatical morphemes, but only those which are realized as bound forms. None of the whole-word functors are missing. But since Estonian is a highly inflected, relatively agglutinative language, omission of bound morphemes alone results in a high frequency of content words and a correspondingly low level of grammatical detail -- that is, it results in macrodevelopment, as Cazden described it for Eve, though the underlying meaning of the strategy may be quite different in the two cases.

R differed from Eve also in that he had bilingual input from the first. The primary language spoken in our home is Estonian, but R's sister frequently brought English-speaking playmates home, and in any case R began spending his weekday mornings at a day-care home (where English was spoken) from the age of 6 months on. When he first began to use words with adult models, between 13 and 14 months, 9 of his early words were Estonian-based, but 2 were English; by 22 months, when R had a total recorded vocabulary of almost 500 words, 132, or 27%, were English. Over this entire period English made up about one quarter

of R's lexicon, on average. Furthermore, by the time R began to combine words into longer utterances, at 20 months, he already had a total vocabulary of 158 words, and he drew on both languages fairly indiscriminately, so that as many as 34% of his utterances at 1;8 were mixed, as in the following examples:

1;7.28 bye, rind 'bye, breast' (after nursing) [first recorded combination]
1;8.16 põll, off 'bib, off'
1;9.0 no tee 'don't do' (i.e., stop tickling me)
1;9.16 more muna 'more egg'
1;9.30 'saada book '[I want] to-get book'
1;10.15 ei võta out 'no take out' (resisting having shirt removed)
1;11.14 ise wash, mine hands 'myself wash, mine hands'
1;11.24 'vaata, I want to, isa on siis 'look, I want to, [where] daddy is then'
2;0.4 puu ai-ai me 'tree ouch me'

This figure declined gradually over the next three months, to 11% at 1;11, and then abruptly dropped to 4% at age 2;0 -- at which point he may be thought to have made a leap forward in (unconscious) separation of the two languages.

Whereas Cazden interpreted Eve's strategy of 'macrodevelopment' as an elaboration of semantic intention, reflecting a relatively greater advance in cognitive aspects, I am inclined to view R's 'macrodevelopment' as simply reflecting a tendency to avoid functors not expressed by whole words. In more positive terms, I call what R seems to have been doing a 'whole word' approach to morphology. To clarify and justify this interpretation I need to illustrate the specifics of R's strategy in more detail. I will do that by singling out four rather striking aspects of his acquisition of morphology: his learning of postpositions before suffixal inflections in Estonian; his use of English has to mark possession in Estonian; his consistent learning of pronominal case and other suppletive or irregular morphological forms well before he began to use the corresponding regular marker; and his long-term use of did

plus verb as an English past tense marker.

With regard to postpositions, R first began making use of them at 1;9 -- one month after he began forming multi-morphemic utterances. Those first longer utterances had been largely composed of whole word chunks, or monomorphemic units, with functional relations expressed, if at all, through the use of function words such as mine, off, up, or, in Estonian, sees 'inside', sisse 'to inside', välja 'to outside'. At 1;9 four different postpositions appeared, one of them used in an idiosyncratic paraphrase of the expected adult form, which uses a case marker; this nonce-expression is marked with an asterisk:

1;9 koogi jaoks? 'for the cake?'
isa 'juurde '[go] to father'
'voodi 'alla 'to-under the bed'
*king jala 'sisse 'shoe into foot' (pro king 'jalga 'shoe on', [lit.'shoe foot ~ into-case'])

In the same month R made a start on cas usage as well:

1;9 Virve toas 'in V's room' (lit. V. room-in)
jänku käes 'in rabbit's hand'
Virve käest 'from V.' (lit. V hand-from-out-of)
lunch käes 'lunch in hand'
kott käes 'bag in hand'
maas sokk 'sock on the ground'
lind 'kätte 'bird catch' (lit. bird hand-into)

We find three different nouns -- 'room', 'hand', and 'ground' -- inflected for three of the locative cases, generally in an adverbial function. In one instance -- Virve käest, lit. 'from out of Virve's hand'-- the inflected noun is actually a frozen form serving as a postposition, translated by English from. Thus, at 1;9 five different postpositions were used vs. two cases, marked on three different nouns. In addition, R used two uninflected nouns in functions which required a case marker -- locative or comitative:

1;9 istu vann[is] 'sit [in] bath'
pliiats[iga] mängi 'play [with] pencil'

In the following month, at 1;10, we find three new postpositions used, for a total of eight:

1;10 ema 'voodi all 'under mother's bed'
auto sees 'in the car' (alternate expression with case: autos)
'voodi 'peal[e] 'on [to] the bed'
puu peal 'on the tree'
Virve 'järgi '[go] after Virve' (i.e., to fetch Virve)

On the other hand, just two new nouns appear with locative case markers, both of them as part of set expressions or routines which were of relatively high frequency in the language addressed to R, and which we may safely assume he had memorized.

1;10 kaka püksis? 'caca in pants?'
juus suus 'hair in mouth'

On the other hand, in addition to the continued use of an unmarked noun to express the comitative case, R has now begun to use nouns in functions which would require an adessive (at-case: -l) or allative (dative or to-case: -le) inflection, with the inflectional marker simply omitted:

1;10 mängi kott [pro kotiga] 'play [with] bag'
no 'juttu [pro jutuga] mängi 'no [=mustn't] play [with] story [i.e., book]'
minu[l] vaja '[to] me [is] necessary (i.e., I need)'
Virve[le] anna 'give [=gave] [to] Virve'
Liisa[le] musi '[to] Liisa a kiss'
isa[le] anna 'give [to] father'
isa on tuba [pro toas] 'father is indoors' (lit. room pro in-room)

R's MLU at this point was about 1;6.

Two months later, at 2;0, R had added some postpositions, including a misuse of selga 'onto the back' in place of jalga 'onto the foot', which suggests that his postpositions have begun to form a productive system.

2;0 *pani sokk [pro soki] 'selga 'put (past) sock on' (lit. onto-back pro onto-foot)
Katie juures 'at Katie's'
sinu kõrval 'next to you'

As far as the 14 cases used in adult Estonian are concerned, R shows signs of mastering only one (besides the unmarked nominative), namely, the in-locative.

2;0 kapis 'in the cupboard'
köögis 'in the kitchen'
*vannis 'in the bath' (but intending 'out of the bath')

The plural marker has also begun to appear at this point. Interestingly enough, R has also created a redundant whole-word marker for the genitive, which is often indistinguishable from the nominative in adult Estonian:

1;11 ei 'kätte ema oma vett 'not get mother's her water'
2;0 arsti oma 'rohtu 'doctor's his medicine'

I have translated R's innovation with an English equivalent which is intentionally awkward. In adult Estonian, oma is used to mark the genitive only in elliptical use, where the absence of an overt marker on many nouns could cause confusion.

In contrast to R's fondness for postpositions and his apparent shrinking away from case markers, we can consider the course followed by two Estonian-speaking girls, neither of whom had more than superficial exposure to English in the period in question, though both were growing up in America. One of the girls, Linda, had only 2% English words in her lexicon at about age 2, while the other, R's sister Virve, had 9%.

Linda began using inflected nouns as soon as she began combining words, at 1;6. Within six weeks she had begun making contrastive, apparently productive use of two inflections, the in-locative and the comitative:

a. locative	1;6	maha	'down, into the ground'	'potti	'to the potty'
		'parki	'to the park'	pähe	'onto the head'
		'sülle	'into [someone's] arms, lap'	vees	'in the water'
	1;7	'vette	'into the water'	'jalga	'onto the foot'
		jalas	'on the foot'		
	1;8	'kooli	'to school'	kastis	'in the [sand]box'
		käes	'in the hand'		

	1;9	'kurku 'into the throat'	'voodi 'into bed'
		'selga 'onto the back'	'kätte 'into the hand'
		'voodis 'in bed'	
	1;10	pargis 'in the park'	'poodi 'to the store'
		köögis 'in the kitchen'	koju 'to home'
		kotis 'in the bag'	
	1;11	kodus 'at home'	seljas 'on the back'
		kausis 'in the bowl'	
b. comitative	1;7	hobuga '[ride] by [lit. with] horse'	jalaga 'with the foot'
	1;8	'rattaga 'by tricycle'	paadiga 'by boat'
		õhupalliga 'with the balloon'	
	1;9	autoga 'by car'	
	1;10	lusikaga 'with the spoon'	nukuga 'with dolly'
		pardiga 'with the duck'	bussiga 'by bus'
		onuga 'with uncle'	patsaga 'with the bath'
	1;11	sellega 'with this'	Mukiga 'with Muki (the dog)'

By 23 months Linda's MLU was 2.4 — about the same as R's, at the time sampled in sentences (1) to (4) above. She was using seven cases, though two of them only sporadically. In a two-hour tape-recording made at this age we find only two postpositions used, one of them imitatively:

1;11	'akna peale 'onto the window'	ukse taga 'behind the door' (imit.)	
	lambi peale 'onto the lamp'		

Her recorded vocabulary up to 23 months lists not a single postposition.

Virve began using inflected forms at 1;4, when she had about 50 words in her lexicon. (Her first word combinations had appeared about a month earlier.) At 1;7 she had used four nouns marked for the in-locative, and at 1;8 she had used five more:

1;4	'vanni 'into the bath'	'tuppa 'into the room'
1;5	'vette 'into the water'	'kooli 'to school'
1;7	'voodis 'in bed'	väljas 'outside'
	toas 'in the room'	autos 'in the car'
1;8	'kööki 'into the kitchen'	suus 'in the mouth'
	'voodi 'to bed'	käes 'in the hand'
	'sülle 'into [someone's] arms, lap'	peidus 'in hiding'
	süles 'in [someone's] arms, lap'	köögis 'in the kitchen'

She was also making productive use of the partitive, or object-case, at 1;8. Yet at this point Virve had used only one postposition:

1;8 'tunnel[ist] läbi 'through the tunnel'

At 1;9, Virve used several nouns in the comitative, as well as four more postpositions: Her MLU at this point was about 2.05.

The significance of the relative imbalance between R's array of varied postpositions and his reluctance to produce inflected forms can be evaluated by comparison with Linda's and Virve's performance. Consider again the comitative, for example. Of Brown's tests for determining whether a functor is likely to be learned early -- perceptual salience, amount of allomorphy, redundancy, and whether or not the functor expresses a major semantic role -- the comitative scores high on most: Though it is unstressed, it is a full syllable in length and always occurs word finally, it is completely unchangeable in form (that is, there is no allomorphy), and it is not normally redundant -- though it is not a pro-form expressing a major semantic role. Both the girls were making frequent and productive use of the comitative by the time they had five postpositions -- but R used his first comitative form at 2;3, and had begun to use it with some regularity only three months later. Notice that the comitative is one of the missing elements in (3) on p. 2, above.

R's use of English <u>has</u> can be understood without recourse to comparison with other children. First of all, we should note that the borrowing of a grammatical marker from one language to another is unusual, even among bilingual children. R suddenly began to make use of <u>has</u> at 1;10:

1;10 Virve has 'saapad jala[s] 'V. has boots on-foot' pro Virvel on 'saapad...
Liisa has 'juttu? 'Liisa has a story?' pro Liisal on jutt?
Raivo has väike 'juttu. 'R has a little story' pro Raivol on väike jutt
Ema has sinine suss. 'Mother has a blue slipper' pro Emal on sinine...
Raivo has paks [nahk jala all]. 'R has thick [skin under his feet]'
pro Raivol on paks...

1;11 Raivo has 'kinni juba. 'R has [something] closed already'
pro Raivol on 'kinni...

It appeared only in constructions of the form Human noun - HAS - Inanimate noun, where the correct Estonian equivalent would be Noun + adessive or at-case marker (in final -l), verb 'to be' in the third person present tense (on), and possessed noun in the nominative. Though the borrowed morpheme flourished only for a three-week period, at a time when R was still producing a high-percentage of mixed-language utterances, R did make analogous use of English have much later, at 2;6:

2;6 Raivo: Kes on -- kes have 'kampsun? 'Who is -- who have sweater?'
Mother: Kellel on 'kampsun? 'Who has a sweater?'
Raivo: Ja. Mul -- Raivo [pro Raivol] -- on kampsun. 'Yes. To me -- [to] Raivo--is sweater.

By this time mixed utterances accounted for no more than 5% of the sentences R used in a bilingual environment (i.e., at home; in addressing monolingual English speakers he also sometimes used Estonian words, but rarely). The English purely analytic construction have/has can be viewed as formally simpler than the Estonian synthetic construction based on noun + case which it replaces here, since there is evidence that a similar option is displayed by children learning, as a first language, Romanian, where both types of construction occur, but where the analytic type is learned earlier (Slama-Cazacu, 1962).

R's preference for irregular over regular morphological forms -- or for memory work over system-building, if you like -- was already illustrated, in a sense, by his heavy use of postpositions before he began to make regular use of case

markers. A second illustration is the preference for pronominal over nominal inflection evidenced in the last line of the dialogue just cited, at 2;6. By age two R was using, on pronouns, the adessive or at-case (which marks possessive on animate nouns) and the allative or to-case (which marks indirect object on animate nouns), though both these cases remained unmarked on nouns for four more months:

mina	'I, sNom'	sinu	'your, sGen'
mulle	'to me, sAllat.'	sind	'you (obj.), sPrt.'
mul	'at me, sAdess.'	sulle	'to you, sAllat.'

Note alternate long forms: minule 'to me', minul 'at me', sinule 'to you'

One might look for a phonological explanation here: Though R was still in the process of acquiring word-final -l (which serves as the adessive marker in Estonian) at 1;10, he was more likely to produce it at the end of monosyllabic words than at the end of disyllabic words. Similarly, R was inclined to reduce three-syllable words to two syllables, generally by omitting the second, post-stress syllable (see Vihman 1980):

1;9	aprikoos	'apricot' →	apoos
	artišokki	'artichoke' →	ašokki
1;10	Monika →	manga	
	virsikut	'peach, sPrt.' →	vikuk

However, when a long word was morphologically complex, R would omit the last syllable or two, leaving a disyllabic stem:

1;8	mesilane	'bee' →	mesi (lit. honey[one])
1;9	punane	'red' →	puna (lit. red)
	sinine	'blue' →	sine (lit. blue)

Thus, when he omits from disyllabic nouns word-final -l or such syllable-length inflections as the allative, or indirect object case (realized as -le) and the comitative (realized as -ga), the reason may be phonological, and the fact

that he is more likely to use sulle 'to you' than Virvele 'to Virve' or isale 'to father' may also be explained in phonological terms, since the pronoun is here a monosyllabic root, whereas the disyllabic noun necessarily becomes trisyllabic when these case-markers are added. In fact R's first attempt at a comitative involved the noun käsi 'hand', which has a monosyllabic root in the oblique forms: käe-ga 'with the hand'.

On the other hand, we find the same preference for irregular over regular inflection in the case of the past tense marker, which is simply realized as -s for regular verbs. Though this was an early inflection for Linda and Virve, both of whom used it at the same time that they used their first nominal inflections, R left the verb root unmarked when he first began to refer to past actions:

1;9 hiir,'kukku (pro'kukkus) 'mouse, fall' (after mouse has just fallen)
anna Dan (pro'andis) 'give, Dan' (after Dan has given him something)
1;10 Raivo'viska maha (pro'viskas) 'R throw down'

His first past tense form occurred in the sentence Raivo tegi 'R did it' at 1;10. At 1;11 he began using person markers for first, second, and third person singular present tense (though he tended to treat them as semantically equivalent variants), and he also used five past tense forms, only one of which was a regular verb: Raivo ütles ... 'R said ...'.

1;11 Virve tuli 'V came'
'Brendan tegi 'B did-it'
Raivo 'ütles... 'R said...'
Virve läks outside 'V went outside'
paha asi oli 'a bad thing was (=happened)'

The following month he used two new irregular past tense forms, but no further regular forms.

2;0 pani 'put'
jäi 'remained'

Finally, at 2;1, we find seven regular past tense forms recorded, alongside two new irregular forms, and at 2;2 we find the first attempt at a regularized version of an irregular verb (a phenomenon evident from the beginning in Linda's past tense usage), as well as hesitation between different forms -- clear evidence that R has now begun to fit the various forms he knows into a productive system.

2;1 sõi 'ate'
läksin 'I went'
sain 'I got'
mina 'andsin 'sulle 'I gave it to you'
ajas (pro ajasin) '[I] drove, caused to go'
'keeras ära 'turned off'
'kukkus maha 'fell down'
kadus ära 'got lost, disappeared'

2;2 'andʃi ~ 'andsi ~ 'andsis pro 'andis 'gave'

A final illustration of R's whole word approach comes from the English past tense, where R followed a pattern much like that just outlined for his Estonian. In fact, R's earliest expression of the past tense in English with explicitly inflected forms occurred in the same month as his first Estonian past tense form (at 1;10), and the forms were irregular -- namely, I did it and I got it. By 2;8 R was making common use of the regular form, and had even begun to overgeneralize it (we wake up'ed, I saw'ed it), but at 2;9 he changed strategy and began using did to mark the past for all verbs, regular and irregular. Some examples from this period are: And they did run away. Because I did take my clothes off at school. Nicholas did give a key to me and I did put it in my pocket. I did hold it for her. I did open my window. I didn't be there. This usage persisted to some extent for at least five months, as is evidenced by a tape-recording of R playing with a friend at 3;2. Picking up a strand of fantasy from his friend, who has just said, "But not the turtle 'cause he is a bad guy. Because he got me yesterday.", R replies, "And the alligator did get -- [then he corrects himself] got you afterday. After the day." In addition, it should be noted that R began using eile 'yesterday' to mark past tense in general in Estonian at age 2, just as he experimented with already as a marker

of the past in English: e.g., I already do it for I did it, at 2;5. In neither Estonian nor English is there any satisfactory phonological explanation for the avoidance of regular inflection markers. Furthermore, though the past regular tends to lag behind the irregular in the acquisition order shown by monolingual children in English (Brown 1973, de Villiers and de Villiers 1973), this does not appear to be the case in Estonian.

To what extent is bilingualism the source of delay in R's acquisition of inflectional morphology? We might argue that, for a child who must deal with two languages from the first in his daily experience, inflectional morphology is in a sense less functional than word-size morphemes, which can more easily be fitted into the structure of either language. Recall that R's total vocabulary exceeded 150 words before he began to use multiword utterances (as compared with a norm of about 50: cf. Nelson 1973, Garman 1979). This delay in word-combination seems clearly traceable to the special cognitive task imposed by the fact of bilingual input. Recall again that of these multiword utterances, fully 20% were mixed, on average, over the first four months. The fact that R drew on the two lexicons so freely, once he began to combine words into longer utterances, seems to lend credence to the view that bilingualism was a factor in the morphological delay. Once he had amassed a sufficient vocabulary to allow word-combination in either or both languages, R may have been reluctant -- or simply not easily able -- to penetrate or try to systematize the varying endings he heard across the two languages. In such a case the combined morphologies of English and Estonian must resemble, for the child, a single, particularly opaque system, full of suppletive forms (English -ed varying with Estonian -s to mark past tense, for example, in addition to all the irregular forms in both languages). Given input of this kind, the child may have a particularly strong impetus to resort to rote memorization -- in other words, to lexical or whole word learning -- in

preference to system-building. Other children exposed to more than one language from the start appear to have followed the same path. For example, Hildegard Leopold and Stephani Pitthan, both learning English alongside German, were both apparently slow to use German inflectional markers (Leopold 1949, Pitthan 1980); also Sandra Murrell, who learned Swedish, Finnish, and English simultaneously, began to develop morphological affixes only at 2;9, though she had a recorded mixed lexicon of 140 words already by age 2, and thus could not be said to be delayed in lexical acquisition (Murrell 1966). Finally, Fantini (1974) reports that "syntactic constructions [at age three] ... were certainly more advanced than the morphological devices to indicate them" (205) in the language of his son Mario, who had a vocabulary of about 500 words at that point.

On the other hand, some bilingual children have shown no apparent morphological delay (see Burling 1959, Imedadze 1967). The structure of the languages in question may play a role. Thus, English could be seen as affecting R's Estonian in an "adstratum" or "superstratum" manner, such as has long been postulated for situations of extensive language contact, the more "analytic" structure of English carrying over to R's treatment of Estonian grammar as well. Since English was not R's dominant language at this point, however -- either in terms of exposure time or size of lexicon -- this seems a rather far-fetched hypothesis.

Alternately, it is also possible that the whole word approach to morphology is simply part of a more general cognitive style, as manifested by R in what might be called his "whole word" approach to phonology (see Vihman 1981). That approach involved "settling on a single sound pattern to render two or more semantically unrelated words which happen to share some phonological characteristics". As Waterson (1971) points out in reporting a similar strategy in her own son's acquisition of phonology, children in such cases appear to

"perceive an utterance as a whole unit". In my discussion of what I termed R's "homonym strategy" I was able to cite comparable data from three English-speaking children, including Waterson's son, and three French or German-speaking children. But of these, we have data regarding the emergence of inflectional morphology only for Hildegard Leopold. We thus have virtually no longitudinal data to draw on -- and none that are free of the bilingualism factor -- in attempting to correlate the two strategies. Could there in fact be an underlying cognitive style involved here, which might warrant attention in future studies, particularly where highly inflected languages are being acquired? What appears to be involved in the phonological domain is a grasping of a whole gestalt, combined with a relative indifference to detail. At the morphological level we see word-learning taking precedence over the learning of systems -- but the systems in question are based on inflectional affixes, that is, on detail below the level of the word. Cognitive style -- or the burden of learning to speak in a bilingual environment? The two factors need not, of course, be in conflict, and it may be their unique confluence that resulted in the language-learning strategy I have reported here. In any case, the alternative interpretations cannot be teased apart on the basis of data from a single child. The question waits upon further data.

REFERENCES

Bellugi, Ursula. The acquisition of negation. Unpublished dissertation. Harvard University, 1967.

Brown, Roger. A first language: the early stages. Cambridge, MA: Harvard University, 1973.

Brown, Roger & Camille Hanlon. Deviational complexity and order of acquisition in child speech. In John R. Hayes (ed.), Cognition and the development of language. New York: John Wiley & Sons, 1970.

Burling, Robbins. Language development of a Garo and English-speaking child. Word, 1959, 15, 45-68. Reprinted in Evelyn M. Hatch (ed.), Second language acquisition. Rowley, MA: Newbury House, 1978.

Cazden, Courtney B. The acquisition of noun and verb inflecitons. Child Development, 1968, 39, 435-448.

Cazden, Courtney B. Child language and education. New York: Hole, Rineart & Winston, 1972.

de Villiers, Jill G. and Peter A. de Villiers. A cross sectional study of the acquisition of grammatical morphemes in child speech. Journal of Psycholinguistic Research, 1973, 2, 267-278.

Fantini, A.E. Language acquisition of a bilingual child: A sociolinguistic perspective (to age 5). Brattleboro, VT: The Experimental Press, 1974.

Garman, Michael. Early grammatical development. In Paul Fletcher and Michael Garman (eds.), Language acquisition: Studies in first language development. Cambridge: University Press, 1979.

Imedadze, Natela. On the psychological nature of child speech formation under condition of exposure to two languages. International Journal of Psychology, 1967, 2, 129-132. Reprinted in Evelyn M. Harch (ed.), Second language acquisition. Rowley, MA: Newbury House, 1978.

Leopold, W.F. Speech development of a bilingual child, IV: Diary from age 2. Evanston, IL: Northwestern University Press, 1949.

Murrell, Martin. Language acquisition in a trilingual environment: notes from a case study. Studia Linguistics, 1966, 20, 9-35.

Nelson, Katherine. Structure and strategy in learning to talk. Monographs of the Society for Research in Child Development, v. 3. Chicago: University Press, 1973.

Pitthan, Ingeborg. The German, English and mixed sentences of a two-year-old. Unpublished manuscript, Stanford University, 1980.

Slama-Cazacu, T. The oblique cases in the evolution of child language. Revue de Linguistique, 1962, 7, 71-89.

Vihman, Marilyn May. Phonology and the development of the lexicon: evidence from children's errors. To appear in Journal of Child Language, 1981, 8.

Waterson, Natalie. Child phonology: a prosodic view. Journal of Linguistics, 1971, 7, 177-211.